



TENNESSEE DEPARTMENT OF

EDUCATION
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Web Design Applications

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| Primary Career Cluster: | Information Technology |
| Consultant: | Bethany King Wilkes, (615) 532-2844, Bethany.Wilkes@tn.gov |
| Course Code(s): | 5903 |
| Recommended Prerequisite(s): | Web Design Essentials (5902) |
| Credit: | 1-2* |
| Grade Level: | 11-12 |
| Aligned Student Organization(s): | Skills USA: www.tnskillsusa.com Brandon Hudson, (615) 532-2804, Brandon.Hudson@tn.gov Technology Student Association (TSA): www.tntsa.org Amanda Hodges, (615) 532-6270, Amanda.Hodges@tn.gov Future Business Leaders of America (FBLA): www.fblatn.org Sarah Williams, (615) 532-2829, Sarah.G.Williams@tn.gov |
| Teacher Resources: | http://www.tn.gov/education/cte/InformationTechnology.shtml |

Course Description

This course, which is a project-based continuation of Web Design Essentials, teaches students work-related skills for advancement into post-secondary education and/or the workplace. The course will provide the concepts and applications that may lead to business industry certification. Course content includes exposure to advanced Web design, graphics, animations, and the complex site design. The course content provides students the opportunity to acquire advanced skills in both theory and practical application of Web design and of leadership and interpersonal skill development. *(This course requires a computerized workstation for each student with Internet access, markup language software and any Commercial Off-The-Shelf (COTS) Web Design Software.)*

*Indicates an optional standard for obtaining one extra credit.

Course Standards

Standard 1.0

Demonstrate an advanced knowledge of the Internet and various terms, tools, and utilities associated with the World Wide Web.

The student will:

- 1.1 Demonstrate the relationship of Web design terms to Web designs and software applications.
- 1.2 Compare and contrast the various types of tools used for file navigation, organization, and movement.
- 1.3 Analyze the process of selecting a site name.
- 1.4 Research new and emerging technologies.

Sample Performance Task

- Plan and propose a new Web site to a potential customer using the appropriate terminology.

Integration/Linkages

Language Arts Gateway English Standards I, II, III, IV, Mathematics, Computer Science, W3C Users Interface domain, *SCANS (The Secretary's Commission on Achieving Necessary Skills)*, National Standards for Business Education, Policy Commission for Business and Economic Education, Future Business Leaders of America, Delta Pi Epsilon, National Educational Technology Standards, and Industry Standards

Standard 2.0

Apply knowledge of social, legal, ethical, safety, and personal issues in product development.

The student will:

- 2.1 Apply work ethics including integrity, honesty, loyalty, and perseverance that meet industry standards.
- 2.2 Research legal responsibilities associated with the use of the Internet as required by federal and state governmental agencies.
- 2.3 Apply copyright laws and their applications to text, visual art, design, music, and photography in Web design and creation.
- 2.4 Discuss threats to personal safety and welfare in use of the World Wide Web and related technologies.

Sample Performance Task

- Design and produce a Web site that includes content where formal permission for use of quotations, photographs, design, and music has been obtained.

Integration/Linkages

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Standard 3.0

Identify career opportunities and industry certifications in Web Design.

The student will:

- 3.1 Research career opportunities in the Web Design field.
- 3.2 Describe the benefits of obtaining industry certifications.
- 3.3 Evaluate industry certifications in the Web Design field.

Sample Performance Task

- Prepare a written report discussing at least five Web Design jobs including nature of the work, training, outlook and earnings.

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Standard 4.0

Demonstrate advanced proficiency with the features and utilities available with commercial off-the-shelf (COTS) Web-building software, such as templates, rollover images, and internal hyperlinks.

The student will:

- 4.1 Review the basic features and utilities available with COTS software.
- 4.2 Create and apply page and site templates using COTS software.
- 4.3 Add interactivity to a Web page using buttons with rollover images.
- 4.4 Improve Web page navigation by inserting internal hyperlinks.

Sample Performance Task

- Use the reports discussing Web Design jobs (previously created) to create an outline of a six-page Web site.
- Create a template to apply to this group of Web pages.
- Use the template to create each page detailed in the outline.
- Edit a Web site to include rollover images and internal hyperlinks to improve navigation.

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Standard 5.0

Use COTS tools to manage the development, maintenance, and evolution of Web site.

The student will:

- 5.1 Analyze principles of typography.
- 5.2 Analyze layout principles.
- 5.3 Analyze principles of design.
- 5.4 Analyze composition concepts.
- 5.5 Apply typography, layout, design, and composition concepts in developing a Web site.
- 5.6 Demonstrate the use of COTS maintenance tools to check spelling, links, and other reports to verify that a Web site is ready for upload to the Internet.

Sample Performance Task

- Apply typography, layout, design, and composition techniques to a Web site that has been previously created in this course.
- Verify that each Website created is ready for upload to the Internet by checking spelling, grammar, links, validation, and browser compatibility.

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Standard 6.0

Use CSS IDs and classes for layout and positioning on pages in a Web site.

The student will:

- 6.1 Review the process and purpose of creating Cascading Style Sheets.
- 6.2 Define and understand the function of an ID.
- 6.3 Define and understand the function of a class.
- 6.4 Design the layout of a Web page using CSS sizing elements such as width and height.
- 6.5 Use CSS-positioning styles to modify the layout of a Web page.

Sample Performance Task

- Create a website (minimum four-pages) that includes advanced features of CSS that are discussed in this standard.

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Standard 7.0

Create, export, and embed a complex animation within a Web site.

The student will:

- 7.1 Review the process of creating components of a basic animation, including drawing tools, frame-by-frame animations, and tweened animations.
- 7.2 Apply a motion guide to a tweened animation to move an object along a specific path.
- 7.3 Create a mask to hide and reveal a selected area of the animation.
- 7.4 Organize the timeline with scenes and add sound to the animation.
- 7.5 Examine the benefits of using basic and advanced scripting with an animation.
- 7.6 Design rollover effects by editing each state of a button.
- 7.7 Assemble an advanced animation and embed it within a Web site.

Sample Performance Tasks

- Create several practice animations that include tweening, motion guides, masks and audio.

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Standard 8.0

Enhance a Web site with sound, graphics, and video.

The student will:

- 8.1 Embed sound files in a Web page.
- 8.2 Embed graphic files in a Web page.
- 8.3 Embed video files in a Web page.

Sample Performance Task

- Create a custom sound to include on a Web page.
- Use a digital camera to collect various pictures of the school and prepare these pictures for embedding on a Web page.

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Standard 9.0

Evaluate interactive forms within a Web site using Database Integration and CGI.

The student will:

- 9.1 Evaluate the usefulness of CGI.
- 9.2 Differentiate the different Common Gateway Interface (CGI) methods.
- 9.3 Evaluate the potential of database queries.
- 9.4 Identify database technologies applicable to Web sites.
- 9.5 Construct forms that accept and process user input using CGI.

Sample Performance Task

- Assume you are hired by the local electronics shop to create an online form which captures warranty information. Construct a form that gathers the appropriate information. Identify an appropriate CGI method to use and associate form fields to corresponding database fields.

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Standard 10.0

Analyze the use of JavaScript and applets in Web site development.

The student will:

- 10.1 Embed ActiveX and Java into a Web page.
- 10.2 Distinguish between a JAVA application and a JAVA applet.
- 10.2 Use JavaScript to detect Web browser types.
- 10.3 Evaluate the relevance of cookies to JavaScript and to a successful Web site.

Sample Performance Tasks

- Discuss the difference between JAVA applets and applications.
- Use JavaScript to detect current web browser type.
- Brainstorm how cookies interact with the functionality of JavaScript.

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Standard 11.0

Incorporate audience usability and accessibility in the development of a Web site.

The student will:

- 11.1 Incorporate basic levels of accessibility and sensitivity in creating web pages.
- 11.2 Incorporate various Web site design requirements, such as what might be specified by a customer or employer.

Sample Performance Task

- Lists the WAI guidelines for Web designers and explains the difference in priority scores.

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Standard 12.0

Identify Web site security issues.

The student will:

- 12.1 Describe the purpose of encryption.
- 12.2 Understand client and enterprise-level security issues.
- 12.3 Contrast personal privacy issues versus employer's rights to regulate computing resources.

Sample Performance Task

- Construct a table explaining the major types of encryption and the protocols that accompany them.

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Standard 13.0*

The student will individually advance toward expert level in a related technological area of choice. *(Optional for obtaining one extra credit)*

(Students must master all of the competencies in Standards 1-12 and are expected to achieve at least one industry certification in order to achieve this optional credit.)

The student will:

- 13.1 Determine an area in the Web Design field in which to prepare for an industry certification exam and develop a strategy for gaining that expertise.
- 13.2 Demonstrate knowledge of secondary/post-secondary transition opportunities.
- 13.3 Discuss the need for life-long learning and retraining as a result of technological changes in the work environment.

Sample Performance Task

- Develop a digital portfolio that demonstrates attainment of important knowledge and skills to showcase professional growth and achievements in Web Design.

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